# UNITED STATES PATENT AND TRADEMARK OFFICE

## BEFORE THE PATENT TRIAL AND APPEAL BOARD

SAMSUNG ELECTRONICS INC Petitioner v. UNILOC 2017 LLC Patent Owner

> Case No. IPR2018-01757 U.S. Patent No. 8,712,723

#### DECLARATION OF WILLIAM C. EASTTOM II (CHUCK EASTTOM)

#### TABLE OF CONTENTS

I.	INTRODUCTION					
II.	ACKGROUND AND QUALIFICATIONS					
III.	THE '723 PATENT					
IV.	CLAIM CONSTRUCTION					
V.	ONE OF ORDINARY SKILL IN THE ART					
VI.	GENERAL ISSUES					
	A. Tamura					
	B. Pasolini11					
	C. Motivation to combine 11					
	D. Obviousness					
	E. Anticipation					
	F. Dominant Axis 15					
	G. Cadence Window 18					
VII.	SPECIFIC CLAIM ELEMENTS					
	<ul> <li>A. Claim 1 "A method of monitoring human activity using an inertial sensor, comprising: assigning a dominant axis with respect to gravity based on an orientation of the inertial sensor;"</li></ul>					
	<ul> <li>B. Claim 1 "detecting a change in the orientation of the inertial sensor and updating the dominant axis based on the change; and"</li></ul>					
	C. Claim 1 "counting periodic human motions by monitoring accelerations relative to the dominant axis by counting the periodic human motions when accelerations showing a motion cycle that meets motion criteria is detected within a cadence window; and"					
	D. Claim 1 "updating the cadence window as actual cadence changes." 25					

E.	Claim 2 "The method of claim 1, further comprising: using acceleration measurements along only the dominant axis to count steps."
F.	Claim 3 "The method of claim 1, wherein at least one of the motion criteria is a dynamic motion criterion, the dynamic motion criterion updated to reflect current conditions."
G.	Claim 4 "The method of claim 3, wherein the dynamic motion criteria includes at least a lower threshold, wherein the lower threshold is adjusted based on at least one of a rolling average of accelerations and the orientation of the inertial sensor."
н.	Claim 4 "A method of monitoring human activity using an inertial sensor, comprising: buffering a plurality of periodic human motions, each periodic human motion comprising a motion cycle;"
I.	Claim 5 "identifying a number of periodic human motions within an appropriate cadence window;"
J.	Claim 5 "counting each of the periodic human motions to enable the monitoring of human activity; and updating the cadence window as a cadence of the motion cycle changes."
K.	Claim 6 "The method of claim 5, further comprising: switching the device from the active mode to the nonactive mode when a number of expected periodic human motions are not identified in the appropriate cadence windows
L.	Claim 7 "The method of claim 5, further comprising: switching from a sleep mode to the non-active mode of operation when an acceleration is detected."
M.	Claim 10 "An inertial sensor based device, comprising:" a dominant axis logic to determine an orientation of a device with respect to gravity, to assign a dominant axis, and to update the dominant axis when the orientation of the device changes; and"
N.	Claim 10 "a counting logic to count periodic human motions by monitoring accelerations relative to the dominant axis by counting the periodic human motions when accelerations showing a motion cycle that meets motion criteria is detected within a cadence window; and a cadence logic to update the cadence window as actual cadence changes."

0.	Claim 11 "The device of claim 10, wherein: the counting logic uses acceleration measurements along only the dominant axis to count steps.". 34
P.	claim 12 "The device of claim 10, further comprising: the cadence logic to update a dynamic cadence window; and the counting logic to count a periodic human motion when an acceleration measurement that meets motion criteria is taken within the cadence window."
Q.	"The device of claim 10, further comprising: a comparator, to compare measurements of acceleration to dynamic motion criteria, the dynamic motion criteria updated to reflect current conditions; and the counting logic to count a periodic human motion when the measurements of acceleration satisfy the dynamic motion criteria."
R.	Claim 14 "A non-transitory machine readable medium containing executable computer program instructions which, when executed by a processing system, cause said system to perform a method for:"
S.	Claim 14 "assigning a dominant axis with respect to gravity based on an orientation of the inertial sensor;"
T.	Claim 14 "detecting a change in the orientation of the inertial sensor and update the dominant axis based on the change; and"
U.	Claim 14 "counting periodic human motions by monitoring accelerations relative to the dominant axis by counting the periodic human motions when accelerations showing a motion cycle that meets motion criteria is detected within a cadence window; and"
V.	Claim 15 "The non-transitory machine readable medium containing executable computer program instructions of claim 14, which, when executed by the processing system, cause said system to perform the method further for: using acceleration measurements along only the dominant axis to count steps."
W.	Claim 16 "The non-transitory machine readable medium containing executable computer program instructions of claim 14, which, when executed by the processing system, cause said system to perform the method further for: switching the device from an active mode to a non-active mode when a number of expected periodic human motions are not identified in the appropriate cadence windows."

X. Claim 17 "The non-transitory machine readable medium containing executable computer program instructions of claim 14, which, when

DOCKET

		executed by the processing system, cause said system to perform the method further for: maintaining a cadence window, wherein the cadence window is updated as an actual cadence changes; and"
	Y.	Claim 17 "counting a periodic human motion when an acceleration measurement that meets motion criteria is within the cadence window." 41
	Z.	Claim 18 "The non-transitory machine readable medium containing executable computer program instructions of claim 17, wherein at least one of the motion criteria is a dynamic motion criterion, the dynamic motion criterion updated to reflect current conditions."
	AA	Claim 19 "The non-transitory machine readable medium containing executable computer program instructions of claim 14, wherein the dynamic motion criteria includes at least a lower threshold, wherein the lower threshold is adjusted based on at least one of a rolling average of accelerations and the orientation of the inertial sensor."
VIII.	ΤA	MURA, FABIO, PASOLINI, AND RICHARDSON COMBINATION
	A.	Claim 4 "The method of claim 3, wherein the dynamic motion criteria includes at least a lower threshold, wherein the lower threshold is adjusted based on at least one of a rolling average of accelerations and the orientation of the inertial sensor."
	Β.	Claim 19 "The non-transitory machine readable medium containing executable computer program instructions of claim 14, wherein the dynamic motion criteria includes at least a lower threshold, wherein the lower threshold is adjusted based on at least one of a rolling average of accelerations and the orientation of the inertial sensor."

IX.	CONCLUSIONS	45	5
-----	-------------	----	---

# DOCKET



# Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

# **Real-Time Litigation Alerts**



Keep your litigation team up-to-date with **real-time** alerts and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

# **Advanced Docket Research**



With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

# **Analytics At Your Fingertips**



Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

# API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

#### LAW FIRMS

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

#### **FINANCIAL INSTITUTIONS**

Litigation and bankruptcy checks for companies and debtors.

## **E-DISCOVERY AND LEGAL VENDORS**

Sync your system to PACER to automate legal marketing.

